108/A

Prolonged swine anaesthesia without gaseous maintenance

M G Thammitiyagodage[1*], R Karunakaran[1], R M S Pimburage[2] and D N Jeyasinghe[2]
[1]*Medical Research Institute, Colombo 8*
[2]*Veterinary Public Health Division, Elvitigala Mawatha, Colombo 5*

Swine are widely used for demonstration of surgical and anaesthetic procedures used in humans. Prolonged anaesthesia is vital in pigs for demonstrations such as ultrasound guided regional anaesthesia. Though gaseous anaesthetic procedures have been developed to maintain anaesthesia in pigs for three hours, the lack of necessary laboratory facilities is a limiting factor to follow the standard protocol in Sri Lanka. The objective of this study was to develop an alternative protocol to be used in less equipped laboratories needing prolonged swine anaesthesia for training purposes. Ethical clearance was obtained from a recognized ethical committee.

Six, Land Race pigs were fasted overnight and their body weights were recorded (15 – 45 kg). Diazepam was given at 1 mg/kg body weight intramuscularly. This was followed by atropine sulphate and dexamethazone 1:1 (v/v) combination given intramuscularly to achieve a dose rate of 0.04 mg/kg atropine sulphate and 1-10 mg/animal (swine) dexamethazone. This dose of dexamethazone is required for glucocorticoid therapy. In pigs weighing up to 15 kg (small), the mouth was kept open using a bolster (4.5 – 5 cm) placed in the mouth and in adult pigs (16 – 45 kg), the mouth was kept open using two cloth tapes for upper and lower jaws to prevent accumulation of secretions. After 10 minutes, 11 mg/kg of ketamine hydrochoride was given intramuscularly for induction of anaesthesia. In five animals and in one animal (small), the auricular vein and superficial epigasteric vein were cannulated using an 18 gauge needle, respectively. The intravenous line was connected to lactated ringer solution. To maintain anaesthesia, ketamin hydrochloride was given intravenously at 2-4 mg/kg. The depth of anaesthesia was assessed by applying pinch techniques on inter pedal skin fold, ear and tail. Whenever the withdrawal reflex was observed, an additional ketamin dose was given for maintenance. On average, four such ketamin doses were given. To prevent the effect of ketamin induced hyperthermia, diazepam was used to further maintain the anaesthetic status. 5% dextrose was incorporated into the intravenous fluid to support the high metabolic rate of pigs. When the respiratory rate reduced below 15-25 breaths per minute, oxygen was given for 15-30 minutes. Swine anaesthetized by this method was used to obtain skills on identification of nerves and vessels important in regional anaesthesia of humans. The success rate of this modified technique was 100% and is therefore, suggested for conventional procedures such as caesarean sections.

drmayuri.geetha@gmail.com